DUTY STATEMENTS FOR GS-13 REGIONAL SPECIALISTS

The following GS-13 duty descriptions can be used as needed to establish or recognize regional experts in various technical specialties. They must be performed at least 25% of the time of the individual occupying a position to be grade controlling and are designed to be added to a district level position description when the incumbent serves as the MSC-wide expert. The specialties described are not all-inclusive, other regional specialist (GS-13) positions can be established based on technical needs and existing expertise.

Structural Engineer, GS-810-13

Serves as the regional technical specialist for navigation projects. Assignments involve work in a broad range of activities and highly specialized structural engineering functions concerning civil works navigation engineering projects. The incumbent to the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks and dams and especially features such as lock miter gates, lock emergency gates, complex filling and emptying systems, dam crest gates, and emergency bulkheads and hoists. Typical specialized skills the incumbent must possess include seismic design/analysis of mass concrete structures, design of mass and structural concrete, risk and reliability analysis, finite element analysis, structural modeling, materials and use of high performance materials, rock and soil anchorage design, miter gate design, lift gate design, etc. This individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Structural Engineer, GS-810-13

Serves as the regional technical specialist for local protection projects (LPP). Assignments involve work in a broad range of activities and highly specialized structural engineering functions. The incumbent to the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply his/her engineering expertise are commonly large, complex, and some features may be without precedent. LPP projects

include large earth, rock-fill, and concrete dams, and appurtenant control structures; may include hydro electric power features including power plants; flood walls; gate closure structures; pumping stations; sewer and drainage structures; and channel improvement structures. Typical specialized skills the incumbent must possess include seismic design/analysis of buildings and Civil Works type structures; design of structural steel and concrete; risk and reliability analysis; structural modeling; materials, and use of high performance materials; rock and soil anchorage design; swing, miter, and rolling closure structure gate design; retaining walls; etc. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Structural Engineer, GS-810-13

Serves as the regional technical specialist for vertical (building) structures. Assignments involve work in a broad range of activities and highly specialized structural engineering functions concerning Military and Civil Works engineering projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Ohio River Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Typical military projects include hangars, munitions buildings, maintenance shops, headquarters buildings, housing, academic facilities, churches, and health facilities. Typical Civil Works projects include pump stations, control structures, visitor centers, resident engineer offices, etc. Typical specialized skills the incumbent must possess include seismic design/analysis of buildings; wind and snow load design; design of structural steel and concrete; structural modeling; materials and use of high performance materials; foundations (spread footings, mat, and pile); rock and soil anchorage design; diaphragm design; and retaining walls design. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Hydraulic Engineer, GS-810-13

Serves as the regional technical specialist for hydraulic design aspects of navigation projects. Assignments involve work in a broad range of activities and highly specialized hydraulic engineering functions concerning Civil Works navigation engineering projects. The incumbent of the position encounters many tasks or projects that involve many

complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks and dams, canals, deep-draft navigation channels, inlet jetties, turning basins and harbor and docking facilities; with features such as complex lock filling and emptying systems, dam spillway and dam crest gates, stilling basins, construction cofferdams, approach channels, guard walls, and lock emergency closure gates. Typical specialized skills the incumbent must possess include design, evaluation, and interpretation of numerical modeling and physical hydraulic model tests for lock filling and emptying systems, and evaluation of physical models for general navigation, hydraulic design of spillway gates and lock emergency closure gates, hydraulic energy dissipaters, cost-effective scour protection bank stabilization structures, drainage structures, and evaluation of navigation and flood impacts of construction cofferdams, etc. This individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Hydraulic Engineer, GS-810-13

Serves as the regional technical specialist for flood protection projects and local protection projects. Assignments involve work in a broad range of activities and highly specialized hydraulic engineering functions. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply his/her engineering expertise are commonly large, complex, and some features may be without precedent. Flood protection projects include large earth-fill, rock-fill, concrete or combination dams with their many hydraulic appurtenances such as gated and ungated spillways, stilling basins, outlet works, control gates and valves, power intake structures, tunnels, conduits and approach and diversion channels and appurtenant control structures. Local flood protection projects may include levees; floodwalls; gravity outlet and gate closure structures; pumping stations; detention basins and sewer and storm drainage structures; lined and unlined flood control channels and improvement structures. Specialized skills the incumbent must possess include the formulation and hydraulic design of major Civil Works structures, including flood control channels, pumping stations, earthen levees and floodwalls, design of interior flood control features, closure structures, diversion structures, tunnels, culverts, channel stabilization and erosion control protection designs, relocations of storm and sanitary sewers, and side drainage structures. This individual occupying this position has technical expertise recognized and used throughout the MSC, by other USACE organizations, other governmental entities, and private firms. The

individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Hydraulic Engineer, GS-810-13

Serves as the regional technical specialist for hydraulic design aspects of coastal engineering facilities. Assignments involve work in a broad range of activities and highly specialized hydraulic engineering functions concerning civil works navigation and flood protection projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design and design review of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The structures to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Coastal engineering projects include facilities such as flood protection levees, sea walls, erosion/sediment control jetties, harbors and beach nourishment measures. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Mechanical Engineer, GS-830-13

Serves as the regional specialist for navigation, hydropower, and other Civil Works projects. Assignments involve work in a broad range of activities and highly specialized mechanical engineering functions concerning Civil Works engineering projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The mechanical features to which the incumbent must apply engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks and dams, especially those with features such as machinery for miter gates, lift gates, emergency gates, filling and emptying systems, dam crest gates, and emergency bulkheads and cranes. Hydropower and other Civil Works project features include pumps, piping, turbines, controls, and a variety of complex machinery. In addition, the incumbent must be knowledgeable of lock, dam and adjoining site structures/systems with the principal

features being related to raw water, potable water, fire protection, sewage, compressed air and HVAC systems. Typical specialized skills the incumbent must possess include design, analysis, functionality review, operational attributes, and A-E and in-house design oversight of large machinery, piping systems, HVAC systems, and other mechanical systems related to lock, dam, and adjoining structure design. This individual occupying this position has technical expertise recognized and used throughout the MSC, by other USACE organizations, other governmental entities, and private firms. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Electrical Engineer, GS-850-13

Serves as the regional technical specialist for Civil Works projects. Assignments involve work in a broad range of activities and highly specialized electrical engineering functions concerning Civil Works projects. The incumbent of the position encounters many tasks or projects that involve many complicated features, i.e., develops innovative design solutions and new techniques to apply to the design of projects in the Division to achieve durable, cost effective, and functional projects for Division customers. The electrical/electronic features to which the incumbent must apply his/her engineering expertise are commonly large, complex, and some features may be without precedent. Navigation projects include locks, dams, and adjoining structures/systems with the principal features being controls, fiber optic networks, lighting, instrumentation, security, closed circuit television (CCTV), communications, power and distribution, grounding and lightning protection. Hydropower and other Civil Works project features include generators, switchyards, large power distribution systems, and controls. Typical specialized skills the incumbent must possess include design, analysis, functionality review, systems integration coordination, operational attributes, and A-E and in-house design oversight of medium-to low voltage power and distribution systems; electronic digital/analog controls; operational/safety interlocks; grounding and lightning protection systems for equipment and personnel; local site and towing industry communications; networks, etc. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.

Geologist, GS-1350-13

Serves as regional technical specialist in engineering geology involving excavations and foundations in rock. Assignments involve a broad range of skills and knowledge applied

to projects of unusual scope and complexity. The incumbent is experienced in a variety of geologic settings and incorporates innovative techniques in solving problems of rock mechanics, rock slope analysis, stabilization, and foundation design. Has broad and varied design experience in projects involving tunneling, design of deep foundations bearing on rock, rock slope design, gravity structures bearing on rock, reinforcement, and foundation treatment. Analysis will involve using various computer programs such as swedge, DDDA, CRSP and equivalents. Proficiency in the statistical analysis of discontinuities, and exceptional skill in the interpretation of field studies and laboratory investigations is a requisite. Sophistication in the use of computer modeling is desired but knowledge of the available tools and their application is sufficient is some cases. The geologist must have a comprehensive knowledge of construction techniques, products, and costs, and be able to make significant contributions to VE studies and the practicality of innovative designs. The incumbent's experience will extend through the full range of design studies including development of plans and specifications and review during construction. The geologist also provides expert advice within the region to other districts and provides independent technical reviews of design products. The individual occupying this position has technical expertise recognized and used throughout the MSC, and often by other USACE organizations, other governmental entities, or private firms. The individual is recognized as a technical expert and regularly consulted by other individuals from within the MSC and often by organizations from elsewhere within USACE in order to use that expertise. The incumbent also contributes to the development of USACE guidelines, regulations, and policies in the area of expertise.